REMARKS

The Examiner has objected to the Abstract. Applicants have amended the Abstract to address the Examiner's concerns, and request consideration and acceptance of the amended Abstract.

The Examiner has also objected to the title. Applicants have amended the title, and request reconsideration and acceptance of the amended title.

Claims 21 and 24-25 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way so as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Particularly, the Office Action states that the claimed feature "such that a current in said first pair of display electrodes flows in the opposite direction from a current in said second pair of display electrodes" is not mentioned in the specification or in the original claims of the parent application.

In response, Applicants respectfully traverse and submit that the claimed feature is supported, for example, by the present specification, page 38, lines 15-20, and FIGS. 4 and 7. Although current direction is not directly described in the specification, the direction would be understood by one skilled in the art from, for example, FIGS. 4 and 7 (marked-up copies of which are attached hereto as Exhibits A and B).

Referring to the figure marked "Reference Figure" (attached hereto as Exhibit C) and FIGS. 25 and 26 (attached as Exhibits D and E), before gas discharge currents I1 and

I2 between electrodes, there exists a current i10 for charging an electrode X1 and discharging an electrode Y1 and a current i20 (= i10) for simultaneously discharging an electrode X2 and charging an electrode Y2. Likewise, after the gas discharge currents I1 and I2 between electrodes, there exists a current i11 for discharging the electrode X1 and charging the electrode Y1 and a current i21 (= i11) for simultaneously charging the electrode X2 and discharging the electrode Y2.

The gas discharge currents I1 and I2 depend on display data. However, the currents i10, i11, i20 and i21 do not depend on display data, resulting in effectively canceling electric noise. The current pair i10 is opposite in direction to the current pair i11, which is adjacent to the current pair i10. Accordingly, the claimed feature is supported in the pending application. Applicants thus request reconsideration and withdrawal of the rejection.

Claims 22-23 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Particularly, the Office Action states that the phrase "both of said sets" lacks antecedent basis. Applicants respectfully traverse the rejection. In claims 22 and 23 the words "both of said sets" find antecedent basis in the previous claim language "a set of first discharge sustaining pulses to each electrode in a first pair of said display electrodes"; that is, the claims define more than one set of discharge sustaining pulses. Withdrawal of the rejection is thus respectfully requested.

Claims 21 and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kanazawa in view of Hirayama. Applicants respectfully traverse the rejection for at least the reason that neither Kanazawa nor Hirayama, alone or in combination, disclose or

suggest at least the combination of features claimed.

The Office Action states, "Kanazawa teaches the step of displaying by discharging between each of the Y-electrodes and one of the X-electrodes adjacent thereto on one side, and displaying by discharging between each of the Y-electrodes and another X-electrode" (emphasis added). However, as shown in FIG. 17 of Kanazawa, each pair of X-Y electrodes is instead separated so as not to cause discharge between any pair and an adjacent pair. For example, Kanazawa, column 11, lines 24-26 states, "FIG. 17 is a block diagram showing a PDP driver according to the present invention. This figure corresponds to FIG. 12," and column 9, lines 27-28 states, "The PDP 15 has the same arrangement as the one shown in FIGS. 1 and 2." As shown in FIG. 1, a cell is separated by walls 4 in order to prevent an influence from adjacent cells. Thus, discharging between adjacent pairs does not occur.

As to Hirayama, the Office Action states, "Hirayama (figure 1) teaches a plasma display system wherein the flowing of current [is] in an opposite direction; see column 4, lines 12-23." This cited portion corresponds to FIG. 2I, wherein a voltage falls at t1 and then rises at t2, whereby the current at time t1 is reversed with respect to that at time t2. However, as is clear from FIG. 2I, t2 is different from t1. Furthermore, the voltage at t1 and t2 relates to fall-down and rise-up of the same pulse applied to the same electrode, and not to adjacent currents each flowing between a pair of electrodes at the same time, for example, to prevent noise generation.

Moreover, Hirayama's plasma display panel has a row (51-5M) and column

(61-6N) electrode structure. There is no parallel electrode structure for gas discharging therebetween. For at least these reasons, Applicants respectfully submit that claims 21 and 24 are allowable over the references of record, including Kanazawa and Hirayama. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

Claim 23 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kanazawa in view of Shinoda. Applicants respectfully traverse the rejection for at least the reason that Shinoda neither discloses nor suggests, among other features, the method wherein the first set of discharge sustaining pulses and the second set of discharge sustaining pulses are in the same phase as each other.

The Examiner states "Shinoda (figures 6-7) shows that the two electrodes (for example Y1 and XI) adjacent to each other and divided in two pairs are in the same phase (see for example figures 7e and 7f) (col. 6, lines 55-68)." However, the phase of pulses applied to electrode Y1 actually is not the same as that of pulses applied to electrode X1, as shown on the marked-up copies of FIGS. 6 and 7 of Shinoda attached hereto as Exhibits F and G. Moreover, as shown, if sustaining discharge arises in display cell K12, for example, the direction of discharge current between electrodes X1-Y1 is the same as that of discharge current between electrodes X1-Y2.

For at least these reasons, Applicants respectfully submit that claim 23 is allowable over the references of record, including Kanazawa and Shinoda. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

Claim 22 stands rejected under 35 U.S.C. §103(a) over Kanazawa and

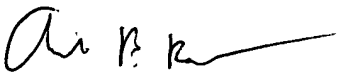
Hirayama in further view of Shinoda. Applicants respectfully traverse the rejection for at least the reasons stated above as applied to claim 21, and for at least the additional reason that Shinoda does not appear to remedy the deficiencies of Kanazawa or Hirayama. Furthermore, as stated above, Shinoda does not appear to teach or suggest at least the feature wherein the set of first discharge sustaining pulses and set of second discharge sustaining pulses are in the same phase as each other. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

Claim 25 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kanazawa and Shinoda, and further in view of Hirayama. Applicants respectfully traverse the rejection for at least the reasons stated above as applied to claim 23, and for at least the additional reason that Hirayama does not appear to remedy the deficiencies of Kanazawa or Shinoda. Furthermore, as stated above, Hirayama does not appear to teach or suggest at least the feature in which current in each of the first pairs of display electrodes flows in a substantially parallel, but opposite, direction to the current in each of second pairs of display electrodes. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

For at least the foregoing reasons, Applicants believe that this case is in condition for allowance, which is respectfully requested. The Examiner should call Applicants' attorney if an interview would expedite prosecution.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By 

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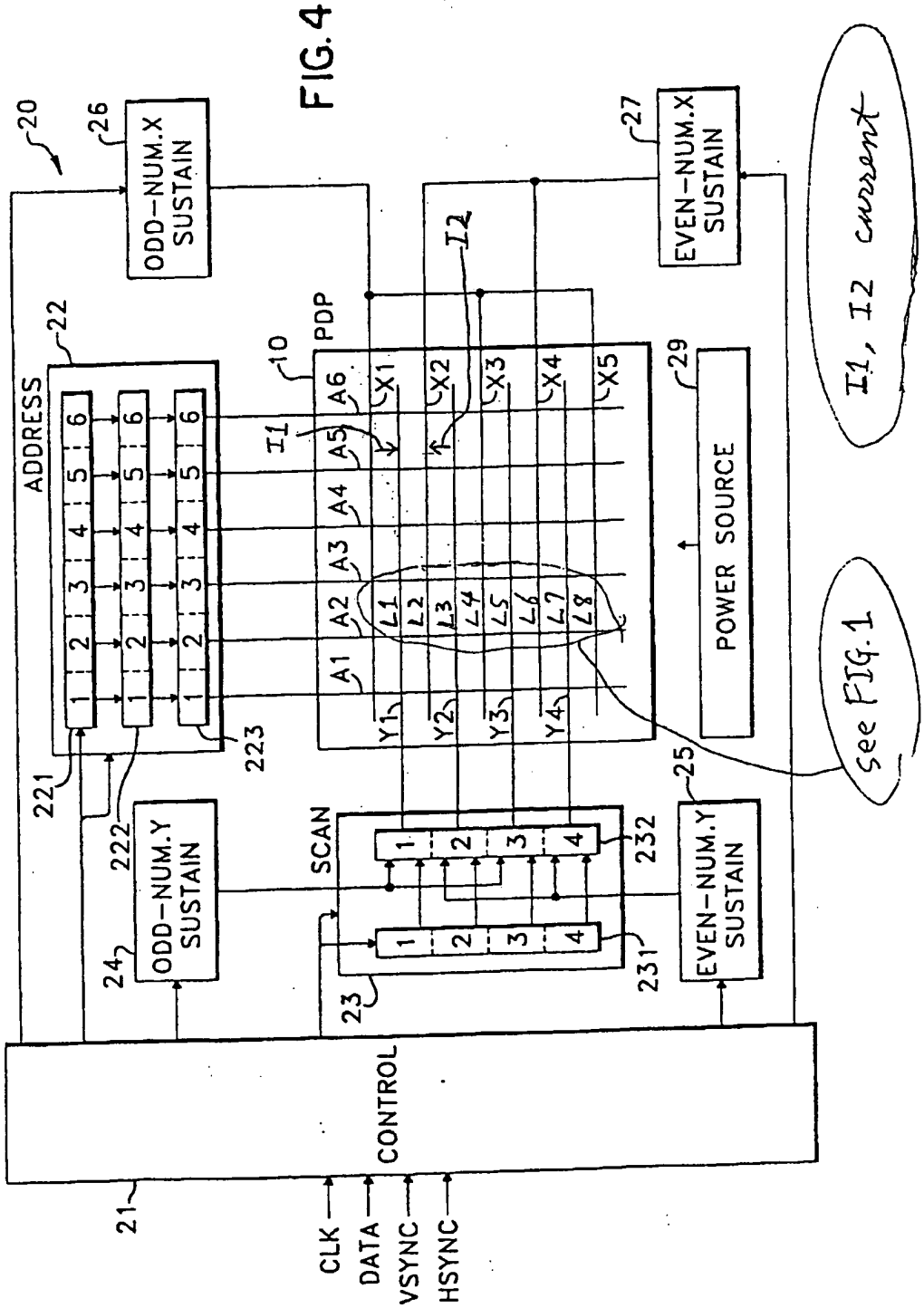
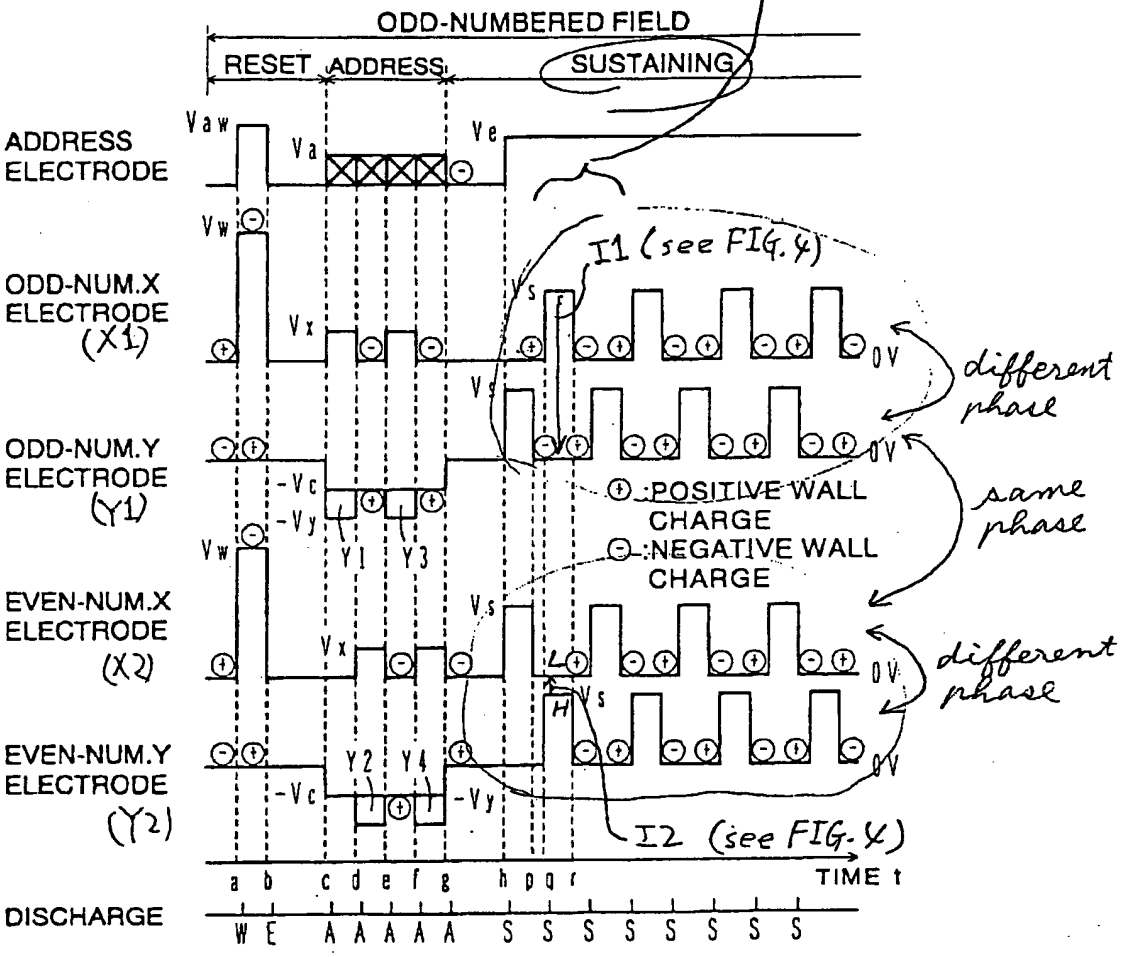

20
26
ODD-NUM.X SUSTAIN
27
EVEN-NUM.X SUSTAIN
I1, I2 current
22
ADDRESS
10
PDP
I1
I2
A6
A5
A4
A3
A2
A1
X1
X2
X3
X4
X5
Y1
Y2
Y3
Y4
L1
L2
L3
L4
L5
L6
L7
L8
29
POWER SOURCE
see FIG. 1
221
222
223
24
ODD-NUM.Y SUSTAIN
SCAN
25
EVEN-NUM.Y SUSTAIN
232
231
23
CONTROL
21
CLK
DATA
VSYNC
HSYNC

FIG. 4

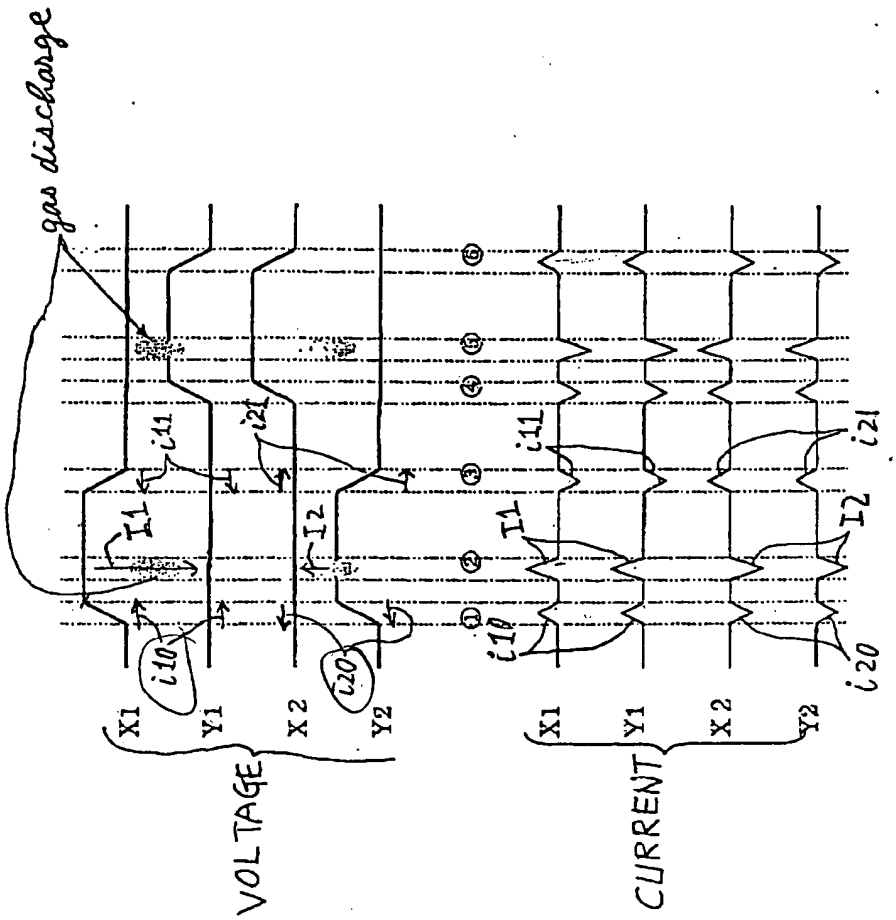
See Res. Fig.

FIG.7



W: WHOLE SCREEN WRITE DISCHARGE
E: WHOLE SCREEN SELF-ERASING DISCHARGE
A: ADDRESS DISCHARGE
S: SUSTAINING DISCHARGE

Ref. Fig. (Present Invention)



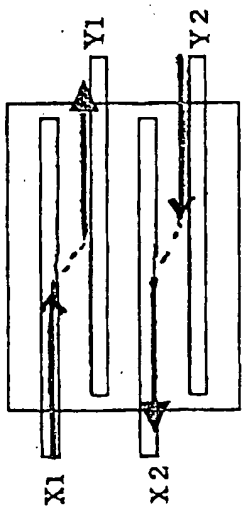


FIG.25

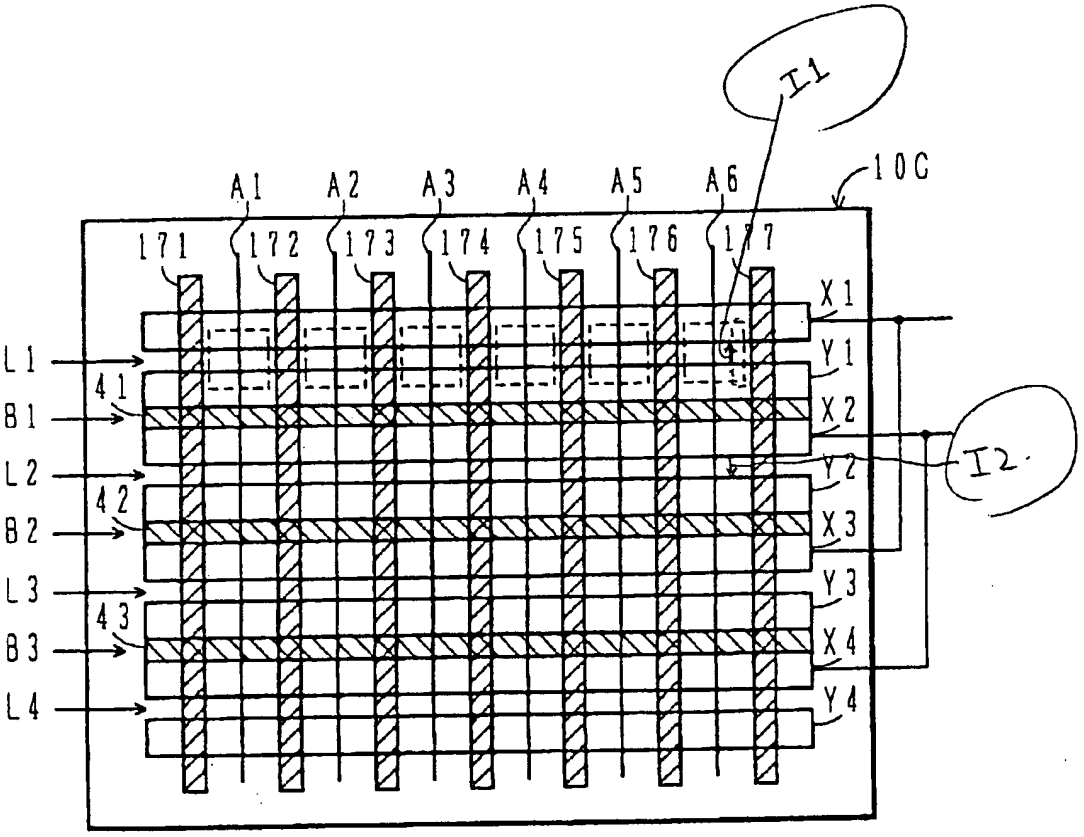
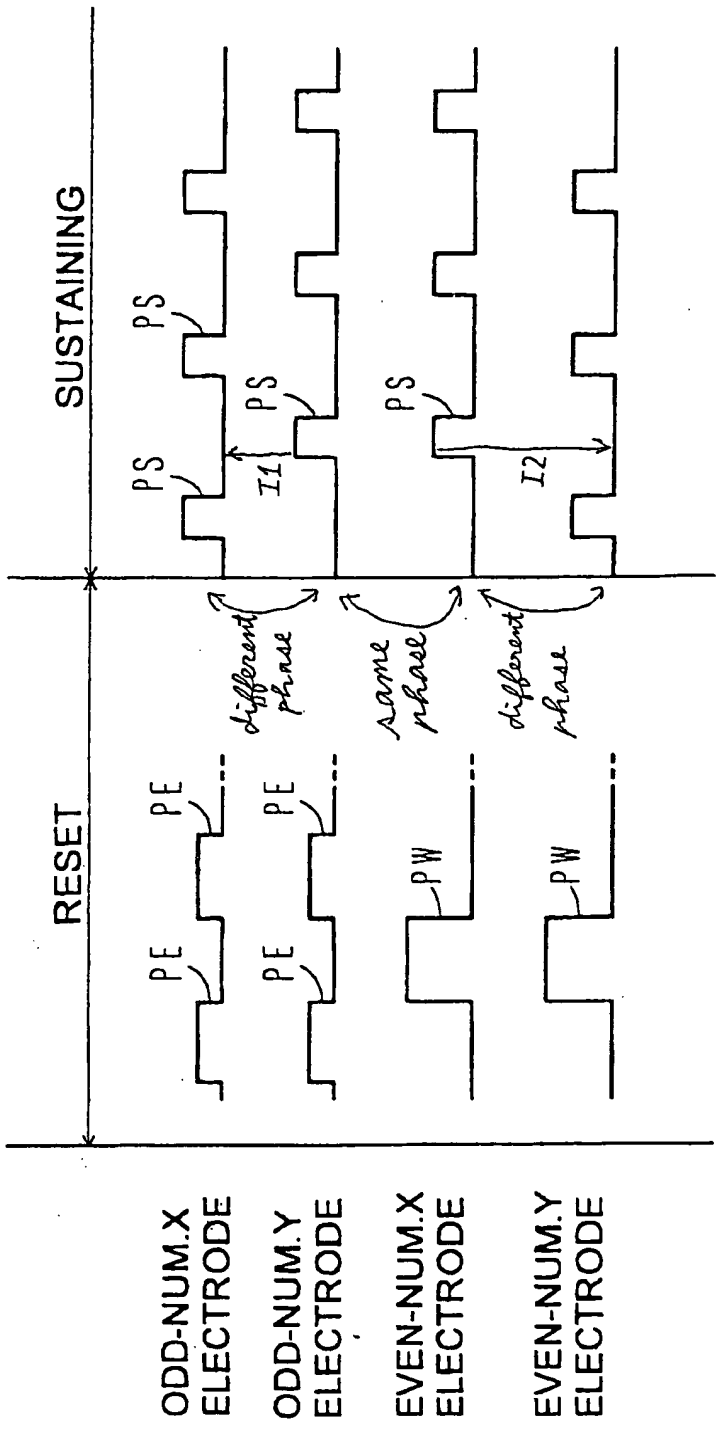

I1
A1
A2
A3
A4
A5
A6
10C
171
172
173
174
175
176
177
X1
Y1
X2
Y2
X3
Y3
X4
Y4
L1
41
B1
L2
42
B2
L3
43
B3
L4
I2

FIG.26



I1, I2 : discharge current between X-Y electrode

FIG. 4

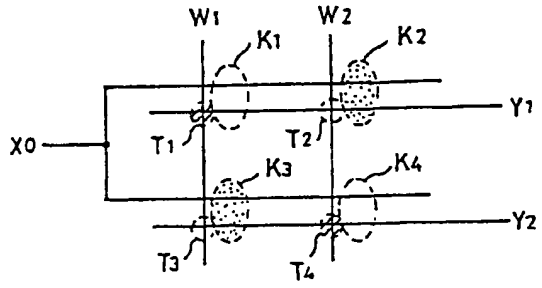
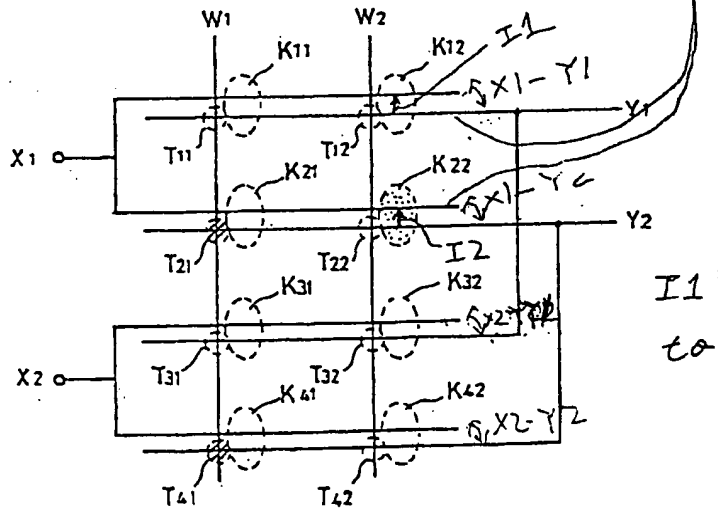


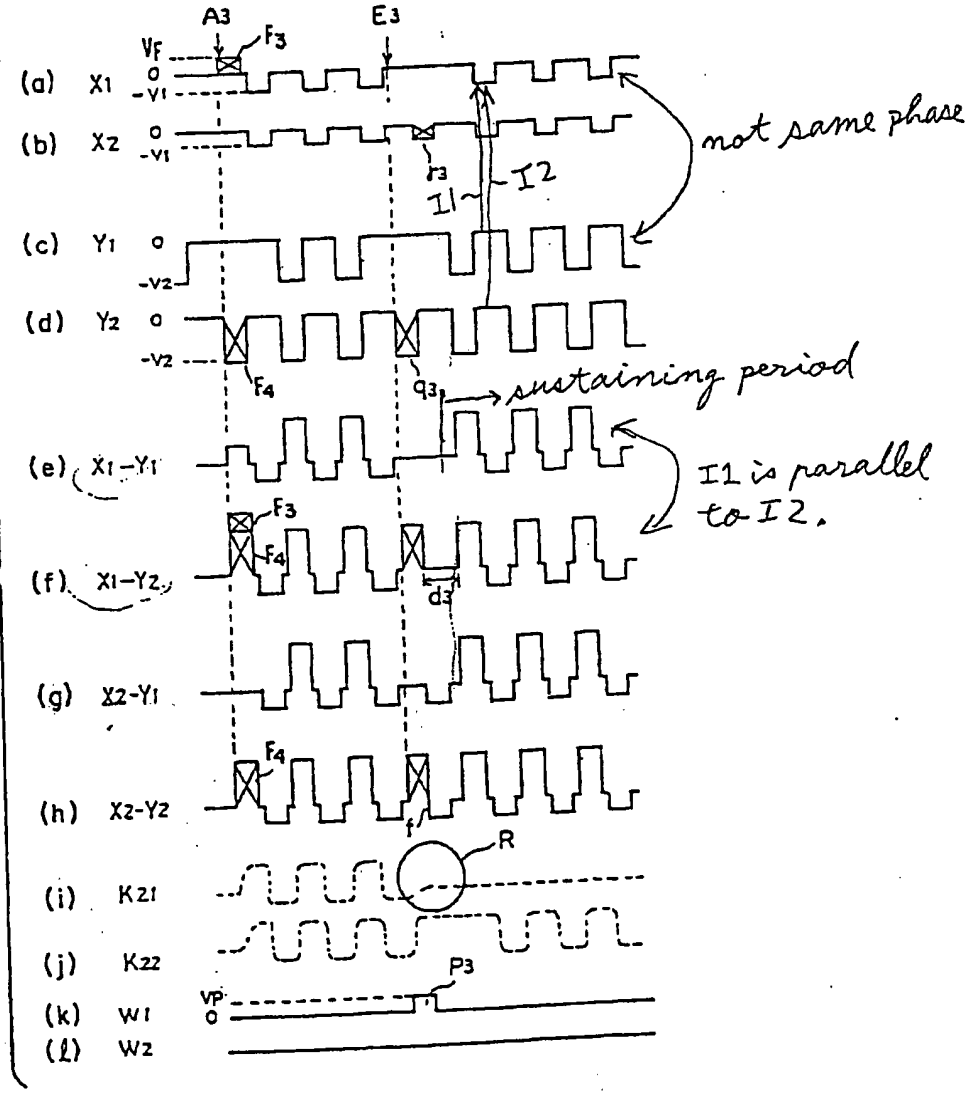
FIG. 6

not same phase



I1 is parallel to I2.

FIG. 7


A3
E3
F3
(a) X1
(b) X2
(c) Y1
(d) Y2
(e) X1-Y1
(f) X1-Y2
(g) X2-Y1
(h) X2-Y2
(i) Kz1
(j) Kz2
(k) W1
(l) W2
-V1
-V2
F4
I1
I2
not same phase
sustaining period
I1 is parallel to I2.
R
P3